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(56) Documents cited  
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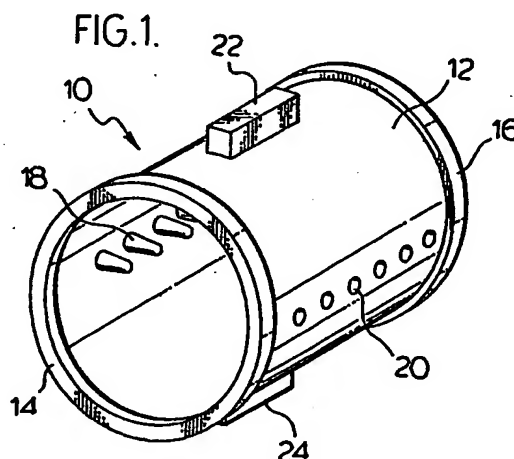
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F2G

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## (54) Culvert pipe coupling

(57) A culvert pipe coupling for helically corrugated culvert pipes has a tubular body 12 in the form of a sleeve with a series of inwardly projecting lugs 18 on its inner wall. The lugs are located on a helical path corresponding to the helical path of the culvert pipe corrugations.



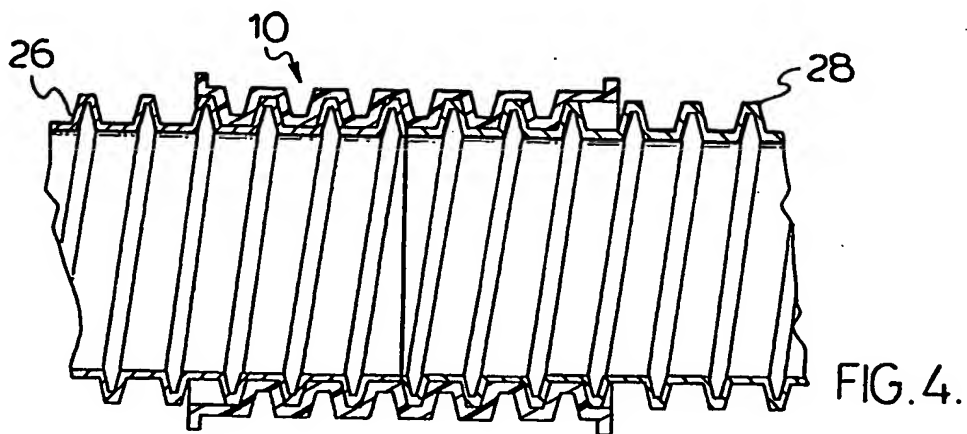
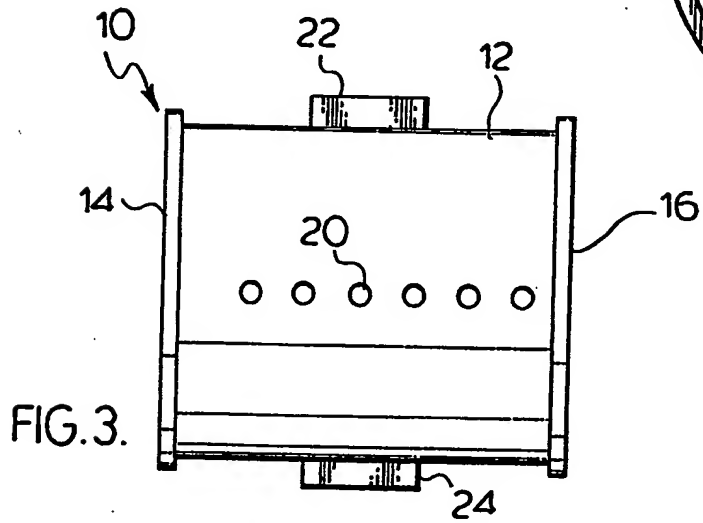
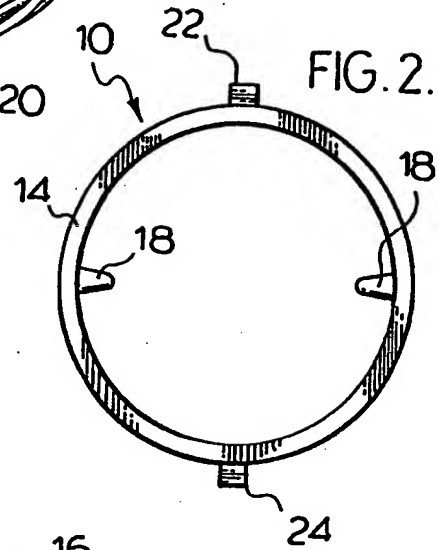
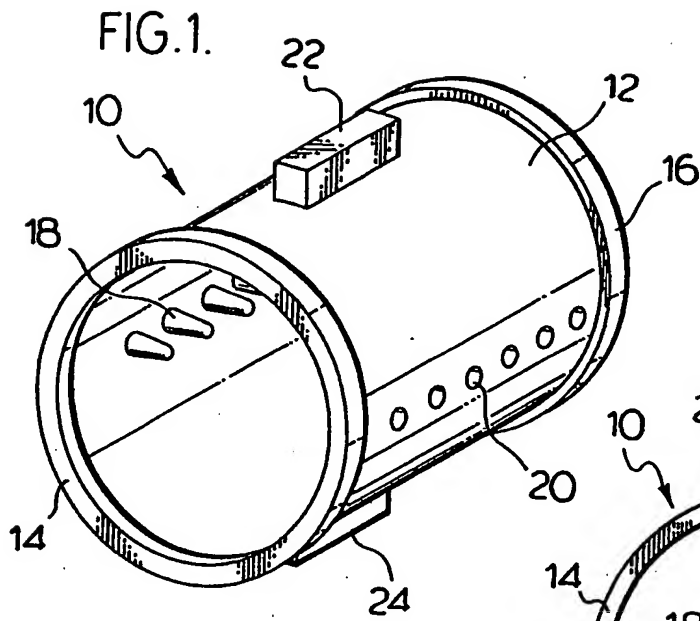


FIG. 5.

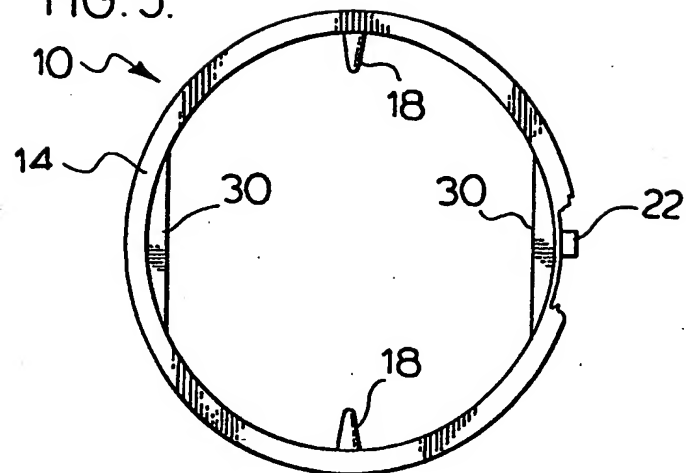
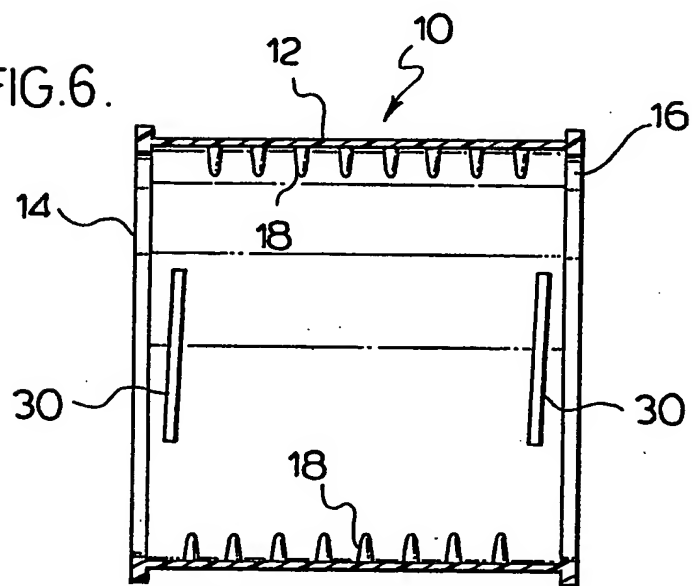


FIG. 6.



## SPECIFICATION

## Culvert pipe coupling

- 5 This invention relates to culvert pipe couplings.

Conventional culvert pipes have a helical corrugation extending for the length of the pipe. Known couplings for connecting adjacent ends of such pipes are awkward and difficult to install properly because

- 10 of the large amount of surface contact between the coupling and the pipes.

It is therefore an object of the present invention to provide an improved coupling for helically corrugated culvert pipes.

- 15 According to the invention, a culvert pipe coupling has a tubular body in the form of a sleeve with a series of inwardly projecting lugs on its inner wall, the lugs being located on a helical path corresponding to the helical path of the culvert pipe cor-  
20 rugations. The coupling can readily be screwed onto a pipe with the lugs engaging in the pipe corrugation, the lugs effecting the connection between the coupling and the pipe with relatively little surface contact between the coupling and the pipe.

- 25 The lugs may be arranged in two diagonally opposite rows, and may be cone shaped.

- The pipe coupling may also include a pair of diametrically-opposite circumferentially-extending rib-like lugs projecting inwardly from the inner wall adjacent each end of the tubular body, with the rib-like lugs being located on the same helical path as the first-mentioned lugs. The rib-like lugs may be angularly spaced from the first-mentioned lugs by about 90 degrees.

- 35 Embodiments of the invention will now be described, by way of example, with reference to the accompanying drawings, of which:

- Figure 1* is a perspective view of a culvert pipe coupling in accordance with one embodiment of the  
40 invention,

*Figure 2* is an end view,

*Figure 3* is a side view,

*Figure 4* is a diagrammatic view of the coupling assembled with a pair of adjacent pipes,

- 45 *Figure 5* is an end view of a culvert pipe coupling in accordance with another embodiment of the invention, and

*Figure 6* is a longitudinal sectional view of the coupling of *Figure 5*.

- 50 Referring to the drawings, *Figures 1* to *4* show a culvert pipe coupling 10 formed as a one-piece thermoplastic resin moulding and having a tubular body 12 with enlarged ends 14, 16 for strength. A series of cone-shaped lugs 18 project inwardly from  
55 the inner wall of the body 12 and are located on a helical path. To facilitate the production of the coupling by moulding, the lugs 18 are hollow and are open to the exterior of the body 12 through apertures 20. The lugs 18 are formed in two diametrically opposite  
60 rows. Also, a pair of diametrically opposite handles 22, 24 are formed on the exterior of the body 12 during the moulding operation.

- With reference to *Figure 4*, it will be readily apparent that the coupling 10 can easily be spun onto  
65 a first helically corrugated culvert pipe 26 with a

second pipe 28 then being assembled therewith in a similar manner.

- Figures 5* and *6* show a further embodiment in which a pair of diametrically-opposite circumferentially-extending rib-like lugs 30 project inwardly from the inner wall of the body 12 adjacent each end thereof. The rib-like lugs 30 are located on the same helical path as the cone-shaped lugs 18 and are angularly spaced therefrom by 90 degrees.

- 75 Thus, when the coupling of *Figures 5* and *6* is assembled with two pipes in the manner indicated in *Figure 4*, each pair of rib-like lugs 30 will engage a respective one of the pipes in addition to the engagement of the cone-shaped lugs 18 with the pipes to provide an improved connection. If desired, further  
80 pairs of rib-like lugs 30 may be provided between the two pairs of lugs 30 previously mentioned.

- Other embodiments and advantages of the invention will be apparent to a person skilled in the art, the  
85 scope of the invention being defined in the appended claims.

## CLAIMS

- 90 1. A culvert pipe coupling for helically corrugated culvert pipes, said coupling having a tubular body in the form of a sleeve with a series of inwardly projecting lugs on its inner wall, the lugs being located on a helical path corresponding to the helical path of the  
95 culvert pipe corrugations.

2. A culvert pipe coupling according to claim 1 wherein the lugs are hinged in two diagonally opposite rows.

3. A culvert pipe coupling according to claim 1 or  
100 claim 2 wherein the lugs are cone-shaped.

4. A culvert pipe coupling according to claim 2 also including a pair of diametrically-opposite circumferentially-extending rib-like lugs projecting inwardly from said inner wall adjacent each end of the  
105 tubular body, the rib-like lugs being located in the same helical path as the first-mentioned lugs.

5. A culvert pipe coupling according to claim 4 wherein the first-mentioned lugs are cone-shaped.

6. A culvert pipe coupling according to claim 4 or  
110 claim 5 wherein the rib-like lugs are angularly spaced from the first-mentioned lugs by about 90 degrees.